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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,200	09/01/2004	Bruce B. Doris	FIS920040152US1	5199
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GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER LE, DUNG ANH	
			ART UNIT	PAPER NUMBER
			2818	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/18/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/18/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
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Office Action Summary

Application No.

10/711,200

Applicant(s)

DORIS ET AL.

Examiner

DUNG A. LE

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 14-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/13/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

The oath/declaration filed on 9/1/2004 is acceptable.

Election/Restriction

Applicant's election **with traverse** of claims **1-13** is acknowledged.

Because Applicant did not distinctly and specifically point out the supposed error in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Applicants have the right to file a divisional, continuation or continuation-in-part application covering the subject matter of the non-elected claims.

The traversal is on the ground(s) that see the election paper. This is not found persuasive because the fields of search for method' and device claims are NOT coextensive and the determinations of patentability of method and device claims are different, that is process limitations and device limitations are given weight differently in determining the patentability of the claimed inventions. Also, the strategies for doing text searching of the device claims and method claims are different. Thus, separate searches are required.

The requirement is still deemed proper and is therefore made **FINAL**.

Information Disclosure Statement

This office acknowledges of the following items from the Applicant:

Information Disclosure Statement (IDS) filed on Dec 13, 2005 has/have been considered and made of record. The references cited on the PTOL 1449 form have been considered.

Drawings

The drawings are objected to for the following reason:

Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to for the following reason:

Reference sign of the protection layer "30" in para [0022] is not included in the drawings (see 37 CFR § 1.84p). Correction is required.

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections

Claim Rejections - 35 USC § 112

Claim 4 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The applicant(s) is reminded that the presence of process limitations on product claims, which product does not otherwise patentability distinguish over prior, cannot impart patentability to the product. In re Stepens 145 USPQ 656 (CCPA 1965). The process step in claim 4, which include “a silicon oxide that has undergone a plasma nitridation process” has not been given patentably weight.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 3, 5 and 8- 9 are rejected under 35 USC 102 (e) as being anticipated by Lin et al. (2004/0075122 A1).

Lin teaches a transistor comprising:

a stack (especially see figs. 2-4 and refer to related texts) comprising:
a silicon on insulator layer 200 having a plurality of channels;
a silicon oxide 210 insulation layer adjacent the silicon on insulator layer 200; and
a dielectric layer 230 adjacent the silicon oxide insulation layer; and
a gate electrode 420 , wherein the gate electrode covers a portion of the stack;
wherein at least one channel has a gate configuration 240 that is different than the remaining channels.

Regarding claim 2, wherein the at least one channel has a first thickness that is greater than the thickness of the remaining channels (fig. 4 and refer to related texts).

Regarding claim 3, wherein the at least one channel has a different gate dielectric than the remaining channels (fig. 4 and refer to related texts).

Regarding claim 5, wherein the stack further comprises a protection layer 250 located between the dielectric layer and the gate electrode (fig. 4 and refer to related texts).

Regarding claim 8, wherein the dielectric layer 230 is a high-k dielectric material [0020].

Regarding claim 9, wherein the stack and the gate electrode are incorporated into a finFET device (fig. 4 and refer to related texts).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 6-7 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Lin et al. in view of the following remark.

Regarding claim 4, Lin teaches the claimed invention as applied to claims 1 and 3 except for the gate dielectric of the remaining channels is a material selected from the group comprising silicon dioxide, nitride oxide, and a silicon oxide that has undergone a plasma nitridation process as cited in current claim 4.

However, the process limitation "a silicon oxide that has undergone a plasma nitridation process." is taken to be a product by process limitation and consider non-limitation. In a product-by-process claim, it is the patentability of the claimed product and not of the recited process steps which must be established. Therefore, when the prior art discloses a product which reasonably appears to be identical with or only slightly

different than the product claimed in a product-by process claim, a rejection based on sections 102 or 103 is fair. The Patent Office is not equipped to manufacture products by a myriad of processes put before it and then obtain prior art product and make physical comparisons therewith. In re Brown, 173 USPQ 685 (CCPA 1972). Also, a product by process claim directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 1 S at 17 (footnote 3). See In re Fessman, 180 USPQ 324, 326 (CCPA 1974); In re Marosi et al., 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Regarding claim 6-7, wherein the protection layer is a metal and wherein the protection layer is a thin polysilicon. Lin teaches the claimed invention as applied to claims 1 and 5 except for wherein the protection layer is a metal and wherein the protection layer is a thin polysilicon as cited in current claims 6-7.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the protection layer is a metal and wherein the protection layer is a thin polysilicon, the abovementioned material commonly used as a mask or protecting layer to protect underlying layer in a etching or patterning process , since it

has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the desired application.

Set of claims 10-13

Claims 10, 11-12 are rejected under 35 USC 102 (e) as being anticipated by Lin et al. (2004/0075122 A1).

Lin teaches a transistor comprising:

a stack comprising:

a silicon on insulator layer 200;

a silicon oxide 210 insulation layer on the silicon on insulator layer;

a dielectric layer 230 on the silicon oxide insulation layer, wherein the dielectric layer is a high-k dielectric material; and

a protection layer 250 on the dielectric layer; and

a gate electrode 420 covering a portion of the stack.

Regarding claim 13, wherein the stack and the gate electrode are incorporated into a finFET device (fig. 4 and refer to related texts).

Claims 11-12 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Lin et al. in view of the following remark.

Lin teaches the claimed invention as applied to claims 10 except for wherein the protection layer is a metal and wherein the protection layer is a thin polysilicon as cited in current claims 11-12.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the protection layer is a metal and wherein the protection layer is a thin polysilicon, the abovementioned material are commonly used as a mask or protecting layer to protect underlying layer in a etching or patterning process , since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the desired application.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung A. Le whose telephone number is (571) 272-1784. The examiner can normally be reached on Monday-Tuesday and Thursday 6:00am- 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, M. Smith can be reached on (571) 272-1907. The central fax phone numbers for the organization where this application or proceeding is assigned are (571)272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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DUNG A. LE 

Primary Examiner

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